



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Mother Lode Field Office
5152 Hillsdale Circle
El Dorado Hills, CA 95762
www.blm.gov/ca/folsom



EA Number: CA-180-09-36

Proposed Action: UC Davis archaeology field school (summer 2009)

Location: MDM, T 4 S, R 16 E
T 3 S, R 15 E
T 4 S, R 18 E
Mariposa, CA

1.0 Purpose of and Need for Action

The Bureau of Land Management (BLM) encourages appropriate scientific use of cultural resources on BLM-administered lands and authorizes such use, consistent with the controlling laws and regulations and the established objectives for the cultural resources' long-term management.

Dr. Jelmer Eerkens of the University of California at Davis (UC Davis) and his students propose limited archaeological excavation at selected prehistoric sites paired with survey and test excavation. This proposed work would occur on BLM-administered lands in the Merced River watershed. The goals of their proposed research project are two-fold. First, they aim to improve our knowledge of prehistoric subsistence-settlement patterns within the foothills and place them in a broader regional context (central California, Sierra Nevada). Particular emphasis would be given to patterns during the early and middle Holocene, for which little is known even at larger spatial scales across the Sierra Nevada. Second, they aim to improve our knowledge of prehistoric steatite use. They would focus on steatite extraction, artifact production, and exchange. UC Davis envisions a multi-year project. Their proposal (attached) outlines the field, lab, and report-writing work they would accomplish during the first year of this project. If successful and promising, they hope that future years of archaeological work can be dedicated to similarly-structured research, but they would submit separate proposals to address those needs and are not covered in the present EA.

UC Davis's proposal to use cultural resources on BLM-administered land for scientific purposes is appropriate given that little archaeological (especially excavation) research has been undertaken within the foothills portion of the Merced River watershed and this area's prehistory is poorly understood. The proposed excavations would destroy a small portion of cultural resources; however, the excavations are clearly prudent in the effects they cause and generous in the public benefits they contribute. Little is known about the area's prehistory. It has not received much attention by archaeologists. The proposed archaeological research also has implications for cultural resource planning decisions and protection priorities. Currently, BLM does not know what the scientific research potential is of each of the sites selected for excavation. BLM does not have a basis for investing in protecting these sites and others like them on BLM-administered land in the area. The proposed archaeological research is important to the public.

Therefore, BLM is considering whether to allow UC Davis to conduct archaeological investigations, as laid out in their proposal (attached). The present EA analyzes the potential environmental impacts of authorizing UC Davis to proceed with their plans.

1.2 Conformance with Applicable Land Use Plans

The proposed action is consistent with the Sierra Resource Management Plan (Sierra RMP) Record of Decision (ROD), approved in February 2008. On page 17 of the ROD it states that BLM will “identify, preserve, and protect significant cultural resources and *ensure they are available for appropriate uses* by present and future generations” (emphasis added). On page 18 of the ROD it states that BLM will “plan for appropriate uses of cultural resources.”

2.0 Proposed Action and Alternatives

2.1 Proposed Action

Under the proposed action, BLM would issue UC Davis a permit, pursuant to the Archaeological Resources Protection Act (ARPA), and a fieldwork authorization. Combined, these authorizations would allow UC Davis to conduct archaeological investigations—including excavations/collection of archaeological materials at prehistoric sites—on BLM-administered land in the Merced River watershed during summer 2009. UC Davis would conduct the investigations in accordance with their proposal (attached). Many of the proposed activities would not impact the environment (i.e., pedestrian survey, note taking in the field, lab work, report preparation, etc.) and are not analyzed in the present EA. Proposed activities that could impact the environment (i.e., archaeological excavations, motor vehicle use to transport field crews and equipment, creating a temporary field camp, etc.) are described and analyzed in detail below.

The field investigation would be conducted by the UC Davis archaeology field school. The class is limited to 24 students though typically between 16 and 20 enroll. The class is taught by a handful of graduate students and professors, including Dr. Eerkens. Staff, students, and equipment would be transported to the excavation/survey locales, via existing dirt roads, in two-to-three 9-person passenger vans and one-to-two smaller trucks. Prior to the start of the field school, roads, camp, and other work areas would be cleared of tall grasses and shrubs with hand tools to prevent wildfire ignition. UC Davis is aware that vehicle access to the sites selected for archaeological excavation is controlled by private landowners and they would get permission from these landowners before crossing their property.

Excavations could cause up to 4 cubic meters of ground disturbance at each of the sites selected for investigation by the UC Davis field school. There may be negligible short-term impacts to soils and vegetation in these areas due to trampling, parking vehicles, piling of back dirt from the excavations, and placing of screens, shovels, and other field school equipment. In their proposal, UC Davis has discussed conducting more than 4 cubic meters of ground disturbance. BLM is discouraging this amount of excavation, but may allow it if it is justified. All excavated areas would be filled in using the back dirt and returned to their pre-field school appearance at the close of fieldwork. Datums and other small markers may be left in place to help relocate the excavated areas in the future.

The field school would camp in the vicinity of the areas (typically within a 30-minute drive of survey/excavation locales). Camping adjacent to the prehistoric sites on BLM-administered land is possible, but is not definite. If developed camping facilities on or off BLM-administered land are available, this would be preferable. If facilities are not available and the field school needs to camp on BLM-administered land, UC Davis would strictly follow a “leave no trace” ethic. A port-a-potty would be brought in. BLM would designate areas for camping, the port-a-potty, and other portable facilities.

Staff and students would camp in temporary tent structures. Shade structures may also be erected. All gear, trash, and other items would be cleaned up and packed out. The field school would follow all BLM instructions with respect to wildfire prevention. Campfires may not be allowed. Care would be taken to prevent the spread of noxious invasive weeds. Vehicles and equipment would be thoroughly cleaned.

2.2 Project Design Features

General: the BLM Mother Lode Field Office archaeologist would monitor all activities to ensure that UC Davis observes agreed-upon conditions of the authorized cultural resource use. The following conditions would be attached as stipulations to the fieldwork authorization issued by the Mother Lode Field Office.

Noxious invasive weeds: Care would be taken to prevent the spread of noxious invasive weeds like yellow starthistle. UC Davis would thoroughly clean vehicles, clothing, and equipment that has passed through weed infested areas. This will help prevent the spread of weeds to new areas.

Wildfire: UC Davis staff would use hand tools to clear grasses so that the vehicles used to transport personnel and equipment would not spark a wildfire. The field school will follow all BLM instructions with respect to wildfire prevention. Campfires may not be allowed.

Temporary Field Camp: If the field school decides to camp on BLM-administered land, UC Davis would follow a “leave no trace” ethic. A port-a-potty would be brought in. All gear, trash, and other items would be removed, with the exception of datums and other small markers which may be left in place on the sites to help relocate the excavated areas in the future.

Cultural: If human remains are discovered during fieldwork, all work in the area/unit of the discovery would stop and the human remains would be left in situ and treated with respect. The BLM Mother Lode Field Office archaeologist would be contacted immediately. BLM will comply with applicable State law, NAGPRA (as outlined in 43 CFR 10), and ARPA (at 43 CFR 7).

All archaeological materials removed from BLM-administered lands by UC Davis will be properly housed in approved curatorial facilities and maintained to Federal standards as U.S. property.

2.3 No Action

Under the no action alternative, BLM would not allow UC Davis to conduct archaeological investigations on BLM-administered land, as laid out in their proposal. BLM would be taking an action that is inconsistent with its national policies and the Sierra Resource Management Plan. (Both BLM’s policy and the RMP encourage the Mother Lode Field Office to allow appropriate scientific use of cultural resources on BLM-administered land.) UC Davis’s proposes an appropriate use of BLM-administered cultural resources. The proposed use serves both public scientific and educational needs. Under the no action alternative, BLM and the public would miss an opportunity to learn more about the prehistory of Merced River watershed. The prehistory of the area selected for investigation is poorly understood. Additionally, students at UC Davis may miss an opportunity to receive training in archaeological field and lab methods.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

There are no alternatives considered but eliminated from detailed analysis.

3.0 Affected Environment

Four of the sites that UC Davis has selected for archaeological excavation are located in the foothills portion of the Merced River watershed in the west-central Sierra Nevada. The selected sites vary widely in elevation. Vegetation and wildlife varies according to elevation, exposure, soils, etc. The lowest elevation area is located at 840 ft on a named tributary of the Merced River (now on the edges of Lake McClure). The vegetation here is an oak-gray pine woodland with dense understory species. The actual site selected for excavations has been impacted by lake fluctuation. The second lowest elevation site is located at 1550 ft in a blue oak savannah near the community of Hornitos. The third site is at 2500 ft in elevation on a named tributary of the Merced River. The vegetation here is a mixed oak-gray pine-ponderosa pine woodland with sparse understory species. The fourth and highest elevation area is located at 3050 ft in elevation near Feliciana Mountain. The vegetation is similar to the third site.

The prehistory of the area is known mainly from archaeological studies conducted in Yosemite National Park, along the upper reaches of the Merced River. These studies indicate that hunter-gatherers groups inhabited Yosemite for thousands of years prior to historic contact in the 1800s, and that by late prehistory (1500 to historic contact about 150 years ago) these groups had a lifestyle typical for Californian hunter-gatherers of the western Sierra. Acorns, deer, and salmon were of primary importance to them. The upper reaches of the Merced River watershed were just one portion of a much larger area used by prehistoric people as they went about procuring these and other resources.

Less is known about the prehistoric land-use in the BLM-administered portions of the Merced River watershed between 3000 and 1000 ft in elevation. Bedrock milling stations and camp sites have been found on BLM-administered land in the watershed within this elevation range, and it seems certain that prehistoric people hunted, gathered, fished, and sought other resources within this part of the watershed, at least on a temporary basis, as part of their seasonal rounds (annual migration into the high country). More substantial settlement appears to have been focused on the river's tributaries on the canyon rim. At the time that Euro-Americans and other outsiders arrived in droves during the mid-1800s, the Miwok – thought to be the descendents of the area's prehistoric people – were living in the Merced River watershed.

The UC Davis's archaeological research would make a valuable contribution to cultural resource knowledge. Little is known about the area's prehistory. It has not received much previous attention by archaeologists. The proposed archaeological research also has implications for BLM's cultural resource planning decisions and protection priorities. Currently, BLM does not know what the scientific research potential is of each of the sites selected for excavation. BLM does not have a basis for investing in protecting these sites and others like them on BLM-administered land in the area. The proposed archaeological research is therefore potentially important to BLM and the public.

The level of recreational use is considered low in the four sites selected by the UC Davis field school for excavations. The areas are all outside of BLM's Merced River Special Recreation Management Area/Merced Wild and Scenic River corridor, which receive heavy recreational use. In some cases, the level of recreational use has been low because the public access is through private property and is not straightforward. The area on Lake McClure probably receives the most recreational use. There is evidence of target shooting in the area and unauthorized cross-country off-highway vehicle use right on the site. The other areas may see occasional hunting use.

None of the sites selected for excavation have outstanding visual resources. Under the Sierra RMP, these areas are to be managed by BLM in accordance with class III visual resource management

(VRM) standards. BLM's objective for class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat basic elements found in the predominant natural features of the characteristic landscape.

4.0 Environmental Effects

The following critical elements have been considered for this environmental assessment, and unless specifically mentioned later in this EA, have been determined to be unaffected by the proposal: air quality, areas of critical environmental concern (ACECs), prime/unique farmlands, floodplains, water quality, hazardous waste, wetlands and riparian zones, wild and scenic rivers, wilderness, and environmental justice.

4.1 Impacts of the Proposed Action and Alternatives

Soils and hydrology: There would be up to 4 cubic meters of controlled archaeological excavation (ground disturbance) at each of the sites selected for excavation by the UC Davis field school. These are archaeological/ anthropomorphic soils within archaeological sites. No unique geologic soil formations would be negatively impacted. The areas would be returned to their preexisting condition at the close of fieldwork. Because the scale of disturbance is very small and the areas would be restored, erosion would be very unlikely. Water quality would not be impacted.

Botany: The BLM botanist has yet to examine the areas where negative impacts would occur to vegetation. These areas include where excavations would occur, where field equipment and gear would be placed, where vehicles would drive and be parked, and where the field school may set up a temporary field camp (and place portable facilities like a port-a-potty). The botanist believes at this time that UC Davis's plans are viable and he would make recommendations for them to follow so that the proposed action/archaeological research would not negatively impact special status plants.

Wildlife: The BLM wildlife biologist has analyzed the proposed action. She has determined that the proposed action would not negatively impact special status animals or their habitats.

Noxious invasive weeds: The spread of noxious invasive weeds is an issue. UC Davis would follow the project design features (2.2) and other recommendations by the BLM botanist in order to prevent the weed spread and new weed infestations.

Cultural/Native American consultation: The BLM archaeologist conducted a study to help BLM comply with Section 106 of the National Historic Preservation Act and other authorities (see attached documentation). Because the proposed fieldwork would not affect more than 4 cubic meters of an archaeological deposit (or more than 25% of the surface area), the proposed action is considered "exempt" (Exemption B6) pursuant to BLM's statewide Protocol Agreement. UC Davis has agreed to provide BLM with management recommendations, based on their analysis, including whether each of the excavated sites is eligible for the National Register of Historic Places.

BLM has conducted Native Americans consultation. Letters were sent out to relevant tribal organizations (see section 5.0). The letters were followed up with telephone calls. The tribal organizations had more than 30 days to respond. BLM has, to date, received no response from these organizations. BLM has concluded that the proposed action would not affect sacred sites or places of traditional religious and cultural significance.

If UC Davis exceeds the 4-cubic-meter threshold (as they have discussed in their proposal), the Section 106 process would continue, pursuant to the statewide Protocol Agreement. If necessary, BLM would work with the State Historic Preservation Officer and others to resolve adverse effects.

Recreation: The proposed action would not negatively impact recreation. The sites selected for excavations by the field school receive very low levels of recreational use. The field school would be temporary and would operate during the warmest time of year. It is unlikely that the field school would displace any recreationists.

Visual resources: The proposed action would not negatively impact visual resources. The field school would come and go with no impact on the land. The areas excavated archaeologically would be returned to their preexisting state at the close of fieldwork. The field school would follow a “leave no trace” ethic. All equipment, tools, trash, etc. would be removed at the close of fieldwork at each area. The proposed action would not compromise BLM’s VRM class III management objective, which is to partially retain the existing character of the landscape.

4.2 Impacts of the No Action Alternative

Soils and hydrology: No impacts

Botany: No impacts

Wildlife: No impacts

Noxious invasive weeds: No impacts

Cultural/Native American concerns: BLM and the public would miss an opportunity to educate university students and to improve our understanding of the prehistory of the Merced River watershed. BLM would miss an opportunity to improve cultural resource knowledge. Without this knowledge, BLM would have a more difficult time investing in the management of the four prehistoric sites (and other like them on BLM-administered land in the area).

Recreation: No impacts

Visual resources: No impacts

4.3 Cumulative Impacts

The proposed action would not have cumulative impacts at the watershed scale. The biggest issue for this EA is the conservation of prehistoric sites (with middens/habitation debris) located in the foothills portion of the Merced River watershed for future scientific research and for other purposes. The UC Davis field school excavations would diminish the integrity of the sites but this change would be negligible; the field school would use a sampling strategy and only a small percentage of the sites would be lost to archaeological research. Most likely, less than 4 cubic meters would be excavated. Considerable portions of the sites would be conserved for future research. The proposed action is prudent in the effects it would cause and generous in the public benefits they contribute.

5.0 Agencies and Persons Consulted

No outside agencies were consulted.

The following Native American tribes were notified by letter, with follow-up phone calls. BLM did not receive a response. The purpose of the consultation effort was to help BLM meet its requirements under Section 4(c) of the Archaeological Resources Protection Act and its implementing federal regulations at 43 CFR 7.7(a) and (b), Section 106 of the National Historic Preservation Act, and other relevant authorities.


Tony Brochini, Chairperson
American Indian Council of Mariposa County
PO Box 1200
Mariposa, CA 95338

Lloyd Mathiesen, Chairperson
Chicken Ranch Rancheria of Me-Wuk
PO Box 1159
Jamestown, CA 95327

Kevin Day, Tribal Chairperson
c/o Robert Cox, Cultural Resources Director
Tuolumne Me-Wuk Tribal Council
Cultural Resources Department
PO Box 699
Tuolumne, CA 95379

5.1 BLM Interdisciplinary Team

Reviewers:


NEPA coordinator/cultural resources


Recreation

Botany


Wildlife

5.2 Availability of Document and Comment Procedures

This EA, posted on Mother Lode Field Office's website (www.blm.gov/ca/folsom) under Information, NEPA (or available upon request), will be available for a 15-day public review period. Comments should be sent to the BLM Mother Lode Field Office, 5152 Hillsdale Circle, El Dorado Hills, CA 95762 or emailed to us at jjbarnes@blm.gov.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

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El Dorado Hills, CA 95762
www.blm.gov/ca/folsom



UC Davis archaeology field school (CA-180-09-36) Finding of No Significant Impact June 2009

It is my determination that this decision will not result in significant impacts to the quality of the human environment. Anticipated impacts are within the range of impacts addressed by the Sierra Resource Management Plan/Final Environmental Impact Statement. Thus, the proposed action does not constitute a major federal action having a significant effect on the human environment; therefore, an environmental impact statement (EIS) is not necessary and will not be prepared. This conclusion is based on my consideration of CEQ's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA and based on my understanding of the project:

- 1) *Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.* Potential impacts include negligible amounts of ground disturbance and vegetation disturbance caused conducting archaeological excavations, placing screens, piling back dirt, using field school equipment, parking vehicles, and setting up and using a temporary field camp for students and staff. The impacts will be short lived; UC Davis will return the affected areas to a pre-field school appearance at the close of fieldwork.
- 2) *The degree of the impact on public health or safety.* No aspects of the proposed action have been identified as having the potential to significantly and adversely impact public health or safety.
- 3) *Unique characteristics of the geographic area.* The project area does not contain any unique characteristics.
- 4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial effects.* No anticipated effects have been identified that are scientifically controversial. As a factor for determining within the meaning of 40 C.F.R. § 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration*, 117 F.3d 1520, 1536 (9th Cir. 1997). "The term 'highly controversial' refers to instances in which 'a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.'" *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).
- 5) *The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks.* The analysis does not show that the proposed action would involve any unique or unknown risks.

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* The proposed action is not precedent setting.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.* No significant site specific or cumulative impacts have been identified. The proposed action is consistent with the Sierra Resource Management Plan.

8) *The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources.* Because the amount of excavation would be less than 4 cubic meters per archaeological deposit, the proposed action would not adversely affect cultural properties listed on or eligible for the National Register of Historic Places. If UC Davis exceeds the 4 cubic meter threshold, the Section 106 process would continue. If necessary, BLM would work with the State Historic Preservation Officer to resolve adverse effect.

9) *The degree to which the action may adversely affect ESA listed species or critical habitat.* No ESA listed species (or their habitat) are known to occur in the area potentially affected by the proposed action.

10) *Whether the action threatens a violation of environmental protection law or requirements.* There is no indication that the proposed action will result in actions that will threaten such a violation.

William S. Haigh
Field Manager, Folsom Field Office

Date

**United States Department of the Interior
Bureau of Land Management
Mother Lode Field Office
5152 Hillside Circle
El Dorado Hills, CA 95762**

8100
CA-180.19

May 19, 2009

MEMORANDUM

To: Field Manager

From: James Barnes, Archaeologist

Re: Section 106 compliance for UC Davis archaeology field school
(summer 2009)

It is the policy of the Bureau of Land Management to encourage appropriate scientific use of cultural resources on public lands and authorizes such use, consistent with the controlling laws and regulations and the established objectives for the cultural resources' long-term management.

Dr. Jelmer Eerkens of the University of California at Davis (UC Davis) and his students have recently proposed limited archaeological excavations at four prehistoric sites along with pedestrian survey/test excavations on lands in the Merced River watershed administered by the Mother Lode Field Office (BLM). This proposed fieldwork would occur during summer 2009 as part of the UC Davis archaeology field school. The fieldwork would be followed by laboratory analysis and report preparation in the fall and winter. Please refer to their proposal attached.

UC Davis's proposal to use cultural resources on BLM-administered land for scientific purposes is appropriate given that little archaeological (especially excavation) work has been undertaken within the foothills portion of the Merced River watershed and this area's prehistory is poorly understood. The proposed excavations would destroy a small portion of the prehistoric sites; however, the excavations are clearly prudent in the effects they cause and generous in the public benefits they contribute

Therefore, BLM is planning to authorize UC Davis to conduct archaeological investigations, as laid out in their proposal.

Because the proposed excavations would not affect more than 4 cubic meters of an archaeological deposit (or more than 25% of the surface area), the proposed action is considered “exempt” (Exemption B6) under BLM’s statewide Protocol Agreement.

The proposed fieldwork also includes motor vehicle use on existing roads to transport field crews and equipment, creating a temporary field camp (with port-a-potty and other temporary facilities), clearing tall grasses with hand tools to prevent wildfire ignition, etc. I have thoroughly inventoried the areas potentially affected by these activities and I believe that these aspects of the proposed fieldwork would not affect cultural resources. The field school would be required to follow a “leave no trace” ethic and would restore the areas to their pre-field school condition at the close of fieldwork. Nevertheless, I would be on hand during excavations to ensure that unauthorized environmental impacts do not occur.

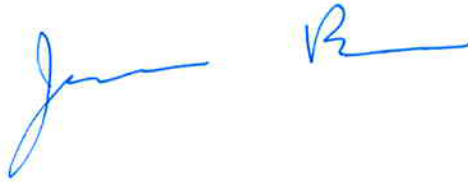
Other proposed activities (i.e., pedestrian survey, note taking in the field, lab work, report preparation, etc.) would not affect cultural resources.

Please note that BLM has conducted Native Americans consultations, as required under the Archaeological Resources Protection Act (ARPA), Section 106 of the National Historic Preservation Act, and other authorities. Letters were sent out to relevant tribal organizations. The letters were followed up with telephone calls (refer to the attached documentation). The contacted tribal organizations had more than 30 days to respond. BLM has, to date, received no response from these organizations. BLM has therefore concluded that the proposed action would not affect sacred sites or places of traditional religious and cultural significance. No other Native American issues have been identified.

Therefore, it is my opinion that the undertaking (issuing UC Davis an ARPA permit and a fieldwork authorization to conduct archaeological research as described in their proposal attached) is either exempt under B6 or would have “no effect” on cultural resources would complete BLM’s obligations under Section 106, pursuant to our statewide Protocol Agreement.

Please note, however, that if UC Davis does exceed the thresholds in exemption B6 (as they have discussed in their proposal), the Section 106 process would continue pursuant to the statewide Protocol Agreement. If

necessary, BLM would work with the State Historic Preservation Officer and others to resolve adverse effects moving forward. UC Davis has agreed to provide BLM with recommendations, based on their limited excavations and analysis, concerning whether each of the excavated sites is eligible for the National Register of Historic Places. This evaluation would be done in accordance with BLM's 8110 Manual and the National Register criteria (36 CFR 60.4).

A handwritten signature in blue ink, consisting of a stylized 'J' followed by a horizontal line and a small 'R'.

**United States Department of the Interior
Bureau of Land Management
Mother Lode Field Office
5152 Hillsdale Circle
El Dorado Hills, CA 95762**

8100
CA-180.19

May 19, 2009

LETTER TO FILE

SUBJECT: Section 106 compliance UC Davis archaeology field school (2009),
Mariposa County

PROJECT: UC Davis archaeology field school (2009),

REPORT #: N/A

DATE(S) COMPLETED: May 19, 2009

TYPE OF SURVEY: Class III

CULTURAL PPROPERTIES PRESENT: At least 4

ELIGIBLE PROPERTIES: Undetermined

DETERMINATION OF EFFECT: Exemption B6 and no effect

SHPO CONSULTATION/SECTION 106 STEPS COMPLETED: All

DISCUSSION: This letter to the file documents that I have reviewed the above listed Cultural Resource Inventory Report. Pursuant to the Protocol Agreement (2007) between BLM California and the State Historic Preservation Officer, I affirm that all necessary steps have been taken to identify, record, and determine effects on cultural properties with the undertaking's area of potential effects. This report has been completed by an approved staff specialist and is in accordance with all standards and guidelines as outlined in the Protocol Agreement (2007).

I concur with the findings of this analysis.



William S. Haigh, Field Manager (CA-180)

5-20-09

Date

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Lloyd Mathiesen, Chairperson
c/o Cultural Resources Coordinator
Chicken Ranch Rancheria of Me-Wuk
P.O. Box 1159
Jamestown, CA 95327

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Craig Powell* ☒ Agent
☐ Addressee

B. Received by (Printed Name)

Craig Powell

C. Date of Delivery

4-1-09

D. Is delivery address different from item 1? ☐ Yes

If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number

(Transfer from service label)

7007 2560 0002 4735 3283

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

Chicken Ranch Rancheria of Me-Wuk
PO Box 1159
Jamestown, CA 95327

Dear Cultural Resource Coordinator:

Dr. Jelmer Eerkens of the University of California at Davis (UCD) has recently contacted the Folsom Field Office (BLM) regarding a proposal to conduct archaeological research on BLM-administered land in Mariposa County. We have attached the UCD proposal for your review and comment.

Dr. Eerkens and his doctoral students are interested in furthering our understanding of prehistoric subsistence and settlement patterns, especially during the early and middle Holocene (3000 to 11,500 years ago). They are also interested in furthering our understanding of prehistoric steatite use and trade. To study these issues, Dr. Eerkens and his students propose to conduct a pedestrian survey, probably on public land burned by the Telegraph Fire in 2008. They also propose to excavate archaeological sites on Lake McClure near Granite Springs, at the Mount Gaines Mine near Hornitos, on Saxon Creek near Telegraph Hill, and on Trubuco Creek near Feliciana Mountain. Please note that the sites selected for study are threatened by reservoir operations, unauthorized off-road motorized vehicle use, and a proposed sand and gravel quarry.

BLM is currently considering the UCD proposal and, in accordance with Section 4(c) of the Archaeological Resources Protection Act (16 U.S.C. 470cc) and its implementing federal regulations at 43 CFR 7.7(a) and (b), we would like to begin consultation with you regarding the proposal. Please review the UCD proposal at your earliest possible convenience, and should you have any religious, cultural, or other concerns regarding the proposed research project, please request a consultation with me within 30 days of your receipt of this letter.

If you have any questions, would like more information, or would like to consult with me regarding the attached proposal, please contact me or my staff archaeologist James Barnes at 916-985-4474.

Sincerely,

William S. Haigh

William S. Haigh
Field Manager

ne Interior



IN REPLY REFER TO:
8100
CA-180.27

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
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1. Article Addressed to:

Tony Brochini, Chairperson
American Indian Council of
Mariposa County
P.O. Box 1200
Mariposa, CA 95338

2. Article Number

(Transfer from service label)

7007 2560 0002 4735 3726

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

PO BOX 1200

Mariposa, CA 95338

Dear Mr. Brochini:

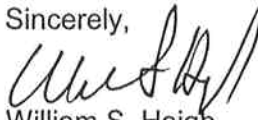
Dr. Jelmer Eerkens of the University of California at Davis (UCD) has recently contacted the Folsom Field Office (BLM) regarding a proposal to conduct archaeological research on BLM-administered land in Mariposa County. We have attached the UCD proposal for your review and comment.

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BLM is currently considering the UCD proposal and, in accordance with Section 4(c) of the Archaeological Resources Protection Act (16 U.S.C. 470cc) and its implementing federal regulations at 43 CFR 7.7(a) and (b), we would like to begin consultation with you regarding the proposal. Please review the UCD proposal at your earliest possible convenience, and should you have any religious, cultural, or other concerns regarding the proposed research project, please request a consultation with me within 30 days of your receipt of this letter.

If you have any questions, would like more information, or would like to consult with me regarding the attached proposal, please contact me or my staff archaeologist James Barnes at 916-985-4474.

Sincerely,



William S. Haigh
Field Manager

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X *Sandra Chipman*☐ Agent☐ Addressee

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Sandra Chipman

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		B. Received by (Printed Name) <i>Luzader Rebecca</i>	
		C. Date of Delivery <i>4/3/09</i>	
1. Article Addressed to: <i>Levin Day, Tribal Chairperson to Stanley Robert Cox, Cultural Resources Director Tuolumne Me-Wuk Tribal Council Cultural Resources Dept P.O. Box 699 Tuolumne, CA 95379</i>		D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below. <input type="checkbox"/> No BLM/MOTHER LODGE P.O. EL DORADO HILLS, CA	
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Tuolumne Me-Wuk Tribal Council
Cultural Resources Department
PO Box 699
Tuolumne, CA 95379

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Sincerely,

William S. Haigh
Field Manager

Consultation for UCD fieldschool ARPA permit

Called Tony Brochini on April 22, 2009
1510

Called Tudmore Band on April 22, 2009
1518 left message
w/ Robert Cox

Called Chicken Ranch on April 22, 2009
1515

Spoke with
receptionist -
don't call us, will
call you

Informally told Robert Cox at
NAHC meeting at Tudmore on April 8, 2009

Called Tony Brochini on May 4, 2009

am - left message
on machine

Proposal for UC Davis Field School in the West-Central Sierra Nevada Foothills, Summer 2009

Submitted by:

Jelmer W. Eerkens, Ph.D., University of California, Davis
Rebecca H. Gilbert, Graduate Student, University of California, Davis
Carly S. Whelan, Graduate Student, University of California, Davis

Introduction

The prehistory of the foothills region along the Merced river drainage is poorly understood. Little survey, and especially excavation, work has been undertaken within the foothills, though work in the lower Central Valley and higher Yosemite Valley sections are better understood. The goals of this research are two-fold. First we aim to document general diachronic subsistence-settlement patterns within the foothills, and place them in a broader regional context. Particular emphasis will be given to the Early and Middle Holocene, for which we know little even at larger spatial scales across the Sierra Nevada. Second, we aim to document diachronic patterns in steatite use in the Merced River area. This research will focus on both steatite extraction, artifact production, and exchange.

To achieve these ends, we propose limited excavation at targeted sites paired with survey and test excavation on BLM lands in the foothills region of Mariposa County. We envision a multi-year project. The sections below outline our proposed research for the first year of this project. If successful and promising, we hope that future years of archaeological work can be dedicated to similarly-structured research, but would submit separate proposals to address those needs.

Environmental Background

The Sierra Nevada mountain range is 80 to 130 kilometers wide and extends northeast to southwest for more than 644 kilometers across eastern California. The western slope descends gradually from mountain peaks to rolling foothills along the edge of the Central Valley. The change in elevation creates distinct ecological zones between the mountain peaks and Valley that host a diverse array of plant and animal species. This results in elevational and seasonal disparities in the availability of plant and animal foods that would have been important to the prehistoric residents of the region. The west-central Sierra foothills exhibit a complex geology of ancient sedimentary and igneous rocks. They are characterized by outcrops of cryptocrystalline silicates, such as chert and chalcedony, and fine-grained meta-volcanic rocks, particularly greenstone. Above the

foothills, rhyolite is the only high-quality toolstone available. As well, deposits of soft sheet silicate materials (aka soapstone or steatite) also exist in the foothill region.

History of Archaeological Research in the West-Central Sierra

Much of the archaeological investigation of the west-central Sierra has been prompted by dam and reservoir projects in the area (Moratto 1984). During 1970 and 1971 archaeologists from San Francisco State University (SFSU) and Merced Junior College (MJC) performed survey and salvage excavation in the New Don Pedro Reservoir Basin along the Tuolumne River and identified 41 sites spanning at least the last 3000 years of prehistory (Moratto 1984). Between 1968 and 1981 the federal government funded ten phases of survey and excavation in connection with the New Melones Dam and Reservoir project along the Stanislaus River (Moratto 1984). Nearly 700 archaeological sites were identified, of which about 90 were sampled. They provide an archaeological sequence that spans approximately 8000 to 9000 years, but the vast majority of the sites investigated date to later part of prehistory, especially after 3000 years ago.

This research has led to a general cultural chronology that has been applied to the region, and summarized recently by Rosenthal (2008). Although such chronologies tend to compartmentalize our understanding of prehistory, and suggest that cultural change takes place primarily at the transitions between “periods,” rather than within them, they are useful for describing rough patterns in prehistory. Table 1 gives the general sequence followed here.

Table 1: General cultural chronology for Western Sierra region

Period	Dates	Point Styles
Recent Prehistoric II	610 BP - contact	Desert series (Cottonwood, DSN)
Recent Prehistoric I	1100 – 610 BP	Corner-notched arrow
Late Archaic	3000-1100 BP	Corner-notched dart
Middle Archaic	7000-3000 BP	Corner-notched dart, Side-notched dart
Early Archaic	11,500-7000 BP	Stemmed points (Western, Concave-base)

Despite extensive research, the early human occupation of the west-central Sierra is still poorly understood (Meyer and Rosenthal 2008; Nadolski 2005). No Late Pleistocene-age sites have been identified in the area. The only evidence of human occupation during this time comes from several isolated surface and near-surface finds of Clovis and Clovis-like points (Meyer and Rosenthal 2008). The earliest recorded and well-dated sites in the area are the Clarks Flat site (CAL-342) on the Stanislaus River and the Skyrocket site (CAL-629/630) in the Salt Springs Valley near Copperopolis (McGuire and Rosenthal 2004; Meyer and Rosenthal 2008; Nadolski 2005; Peak and Crew 1990). Both are Early Holocene in age.

The Clarks Flat site has produced radiocarbon dates that range from 11,720 to 6250 B.P., along with 325 Western Stemmed Series projectile points (Peak and Crew 1990). The Skyrocket site has produced radiocarbon dates ranging from 9240 ± 150 to 9040 ± 250 B.P. and a variety of stemmed projectile points (McGuire and Rosenthal 2004; Nadolski 2005). Several hundred millingstones and other cobble-based scraping and pounding tools have also been found at the site, along with the remains of acorn, gray pine, and wild cucumber (McGuire and Rosenthal 2004). Many of the tools recovered

from both sites were made from a distinctive greenstone that may come from a quarry at Rancho Murieta (Meyer and Rosenthal 2008).

Middle and Late Archaic sites are more numerous in the western Sierran region. Important sites with Middle and Late Archaic components include the East Sonora Bypass site (CA-TUO-4559), CA-ALP-152 on the Stanislaus River (Peak and Neuenschwander 1991), and the Black Creek site (CA-CAL-789). In his review of 100 excavated sites in the west-central Sierra, Rosenthal (2008) found that there was little change in diet, technology, and land use from the Middle to Late Archaic periods, other than an increase in the use of imported obsidian during the Late Archaic. Pine nuts, found in the foothills, were the most significant fall and winter plant food throughout most of the Archaic period. Seeds, roots, bulbs, and fruits from the higher elevations provided the staples for the spring and summer months, indicating that the Archaic people of the west-central Sierra engaged in seasonal mobility. Large animal remains, primarily deer, dominate the faunal assemblages of both elevations. Archaic west-central Sierra artifact assemblages typically consist of expedient, unspecialized ground and flaked stone tools, soapstone vessels, and very few exotic goods, with the exception of obsidian.

The Recent Prehistoric period is marked by a notable increase in the number of recorded sites, particularly in light of the more narrow time range represented (ca. 1000 years vs. several thousand years in the Late and Middle Archaic). An increase in spring and summer ripening food in both the low and high elevations of the west-central Sierra caused the seasonal mobility pattern to change during the Prehistoric period. Acorns in the foothills became the dominant fall and winter plant food, though pine nuts became important during the late fall in higher elevations. Small seeds that ripen in spring and summer and late-summer-ripening berries became important in the foothills and late-spring ripening seeds were added to the diet of summer-ripening seeds, roots, bulbs, and fruits of the higher elevations. Deer again dominates the faunal assemblages of the Late Prehistoric period. Late Prehistoric artifact assemblages contain a wider array of ground and flaked stone tools than Archaic assemblages, as well as bone tools and exotic goods, including shell beads from coastal California. During this period, mortars and pestles replaced milling and handstones, and the bow and arrow replaced the atlatl.

California Steatite Quarries

Steatite, also known as soapstone and talc, is a soft, easily worked stone with high heat-tolerant qualities known and utilized by almost all of Native California tribes (Heizer and Treganza 1972). Steatite was made into smoking pipes, cooking vessels, cooking stones, beads and pendants, charms and ceremonial items, and arrowshaft straighteners (Truncer et al. 1998; Heizer and Treganza 1972; Walker 1935). Steatite artifacts have been found in archaeological sites throughout California, but relatively little is known about production and exchange of these materials.

The quarries on Santa Catalina Island are perhaps the best studied in California. The main quarries lie about ten miles northeast of Avalon and were first discovered by Paul Schumacher in 1876 (Heizer and Treganza 1972). Found were unfinished and broken artifacts along with quarrying tools including granite picks, quartzite scrapers, sandstone files, and grooved stone axes (Heizer and Treganza 1972). While the Chumash steatite quarries on the Channel Islands are the most well known, they are not the only source of this versatile stone used throughout California. Heizer and Treganza identified

a total of 13 localities of steatite quarries, including several in the central Sierra Nevada, most of which were probably utilized to a lesser extent (1972).

Four ethnographically described quarries have been identified in the Sierra Nevada Mountains the southernmost one about 200 miles to the north of Santa Catalina Island (Heizer and Treganza 1972; Walker 1935). Table Mountain located near Belleview, Madera County, and Fish Creek Mountain in Fresno County were identified by Gifford (1932, cited in Heizer and Treganza 1972). About four miles northeast of the city of Lindsay in Tulare County is a soapstone quarry used both prehistorically and in modern times (Heizer and Treganza 1975; Walker 1935). Edwin F. Walker visited the site and discovered a prehistoric soapstone quarry above the modern one and tools, including stone picks, mauls and scrapers of a material foreign to the area, in association with the outcropping. Also found were small fragmented pieces and slabs of soapstone and unfinished vessels that had been abandoned (Walker 1935). The fourth quarry is located about one mile east of the town of Tuolumne in Tuolumne County (Heizer and Treganza 1975). Known to the local tribe, the Sierra Miwok, as *Lotowayaka*, the deposit occurs at the same level in both the north and south walls of the canyon of the north fork of the Tuolumne River. The deposit is cut by the old Duckwall road and is close to a spring called Indian Spring by Americans and *Kolakota* by the Miwok. The Miwok call the quarry on the south wall *Tile* (Barrett and Gifford 1933).

Archaeological investigations, described in greater detail below, have identified a number of additional quarries that were used in prehistoric times.

Sierra Nevada Steatite Chronology

Regional data for west-central Sierra Nevada show steatite use dating as far back as the Early to Middle Archaic with increased use into the Late Archaic and Recent Prehistoric I/II periods. Middle Archaic sites have produced diagnostic artifacts, including atlatl-associated tools (weights and spurs) and non-diagnostic ornaments and vessels. Quarrying is evident in Late Archaic components with well-formed vessels dominating the assemblage. During the Recent Prehistoric a broader range of sites contain steatite with diagnostic bow-and-arrow associated tools (shaft wrenches and straighteners) and disc beads and ornaments (Rosenthal 2008).

Full-scale local steatite manufacture is not evident within the west-central Sierra foothills, though some small-scale quarrying has been identified and described (Rosenthal 2008). However, the broad range of artifact types, ranging from ornamental (beads, pendants, ear spools) to utilitarian (cooking bowls and serving platters) to hunting-associated (e.g., atlatl spurs and weights, arrow-shaft straighteners, wrenches), suggests that steatite quarrying and production was a major activity in the region. Moreover, the discovery of steatite artifacts far away from the west-central Sierra Nevada (e.g., Owens Valley, Central Valley), in regions where the raw material does not naturally occur, suggests that trade was an important component of steatite production and consumption as well. The proposed research seeks to highlight some of these patterns and contribute to our understanding of ancient steatite use, from a diachronic perspective, in the state.

Prior Investigations Involving Steatite Research

Investigations for California Department of Transportation (CA-FRE-1671 and

CA-FRE-63) and Far Western Anthropological Research Group, Inc. explored steatite artifacts and natural sources. We focus on those reports due to the quantity of steatite recovered and the generally more intensive analytical time devoted to steatite analyses in those reports.

Investigations for the California Department of Transportation (CalTrans) at CA-FRE-1671 uncovered a total of 308 steatite artifacts from classified into 14 artifact categories. Most abundant of these were manufacturing detritus numbering 129 items. Additional artifact classes represented include disc beads (89); small ring bead (1); medium perforated discs (5); large, perforated discoids (2); "doughnut stone" (1); pecked, gouged pebbles (33); pecked, shaped cobble (1); polished cylinder (1); polished, tapered cylinders (3); polished rings (2); perforated, elongated pendant (1); vessel sherds (37); and conically drilled pieces (3). Numerous unmodified streamworn pebbles and small cobbles were also recovered. The color of the steatite ranged from gray to blue-gray but also included buff, pink, black, green and orange pieces (Moratto 1988).

Investigations done at CA-FRE-64 produced both finished and unfinished bowls, pendants, beads, cooking stones, and others. The finished artifacts include finely and crudely finished bowl fragments. Of these fragments, 32 rim and 18 wall fragments were recovered during previous excavations in 1987 and 21 rim and 11 wall during the 1989 project. Other finished artifacts of steatite include 9 disc beads; 1 pendant; 2 ear plugs; 1 small, slightly convex cylinder; 1 disc fragment; and 2 shaped fragments of unknown purpose. Unfinished artifacts recovered from CA-FRE-64 were 41 vessel fragments in all stages of manufacturing processes. Also found were 13 unfinished specimens that appear to be blanks for ornamental purposes and 21 cooking stones. Worked steatite fragments (36 in number) were recovered but undeterminable in nature (Wallace et. al. 1989).

CA-FRE-64 also produced numerous steatite manufacturing tools. Inclusion of items of tools was conservative with those with definite steatite ground into the end and those fitting ethnographic descriptions being part of the analysis. The first of these are 28 small utilized chunk or flake tools assumed to have been used after the steatite artifact had been roughed out. These are divided into two groups: tip tools and shavers. Fourteen tip tools show use-wear around or on the tips and include drills, "reamers", combination reamer/shaver, four "bits", and a graver. Shavers comprised of 15 tools that have edges that have the appearance of being used in a scraping/shearing motion. Other classes of steatite manufacturing tools recovered are polishing and smoothing pebbles; large scrapping tools/scraping chisels; and hammerstones (Wallace et. al. 1989).

Steatite recovered from the East Sonora Bypass sites by Far Western dates to the Middle Archaic to the Recent Prehistoric period. Most of the artifact components comprise of bowls, dishes/platters, pendants/ornaments, heating stones, debitage, and miscellaneous modified stones. Artifacts collected from other sites in the region include atlatl weights and spurs, shaft straighteners and wrenches, and grooved cylinders. The use-wear observed includes pecking, grinding, polish, striations, flaking, and gorging. The East Sonora Bypass Archaic steatite assemblage totals 49 modified pieces with 21.4% vessels, 12.9% ornaments, 2.9% beads, and 2.9% atlatl weights. Numerous unmodified pieces were also recovered during excavations. The Recent Prehistoric assemblage numbers 33 modified pieces with beads and ornaments comprising of 33.3% and shaft wrenches and straighteners representing 18.2%. Other artifacts are represented

by only one to two items each and unmodified steatite essentially absent (Rosenthal 2008).

Research Issues

To date, most research along the Merced River, in particular, and Mariposa and Merced counties, in general, has either been in the Central Valley bottom proper or higher up in the Yosemite Valley. Little excavation has been undertaken in the foothill region of Mariposa County and there is a paucity of information on ancient adaptations. The proposed research focuses on two issues, one general, related to subsistence-settlement patterns, the other specific, concerning steatite artifact production, use, and trade. These are described below.

Subsistence-Settlement Patterns

We wish to place the foothill region in a better diachronic subsistence-settlement context. It is frequently assumed that Early and Middle Holocene hunter-gatherer populations were highly mobile, crossing from the Central Valley bottom, through the foothills, to reach the upper reaches of the Sierra Nevadas, such as Yosemite Valley. These peoples curated and carried with them artifacts acquired from the higher-elevation Sierra Nevada region into the Central Valley, and vice versa. Later in time, it is generally assumed that populations settled down and the foothill region became a permanent home to regional inhabitants. It is usually assumed that exotic artifacts were traded, rather than directly accessed, across this region.

We hope to test both these propositions with excavation data from the foothill region itself (rather from the Central or Yosemite Valley). In particular, aim to capture temporal “snapshots” in time when people made use of this region (“snapshots” are relative and vary in the length of time they represent, but reflect the notion that they were used for a limited amount of time). Subsistence (e.g., faunal and paleobotanical) and artifactual (e.g., projectile points, flake tools, milling stones, as well as use-wear) can inform archaeologists about the range of economic behaviors practiced by ancient inhabitants of a site across the time it was inhabited. The presence of non-local raw materials, as well as associated artifact manufacturing debris, can inform about where people came from prior to inhabiting a site or from where they retrieved raw materials to produce artifacts. As such, these items can inform about mobility and settlement patterns. As well, since certain plants and animals are available in the foothill region only during certain temporal windows, information from faunal and floral remains can inform on site seasonality. This information, too, can inform on how people are moving (or not) across the landscape.

This line of the research is not particularly ground-breaking in methodology or theoretically, but is important in the Merced-Mariposa County region, where less is known. We hope to compliment the more extensive research that has been undertaken in the Yosemite Valley (e.g., Bennyhoff 1953; Grosscup 1954; Hull 2005; Hull and Moratto 1999; Moratto 1981). In any case, it will require generating a sample of sites that are investigated with excavated. We hope to do that by testing four previously-recorded sites, and locating additional sites for future excavation research through survey. In particular, given the paucity of data on earlier time periods, we will differentially focus the survey on the location of older Early and Middle Holocene sites.

The planned dissertation work of Carly Whelan will incorporate this aspect of the research. Her intent is to build a diachronic model of residential vs. logistical mobility strategies relative to resource use in the central Sierran region. Some of this research will be based on re-analysis of existing collections. However, more intensive investigations along a single river drainage are necessary for her to test the model.

Diachronic Steatite Use and Trade

Our more specific research issue concerns the use of steatite in the Sierra Nevada foothills. Although recognized as an important raw material for the production of a range of goods, we know comparatively little about:

- where steatite was quarried
- how intensively steatite was used
- how distributed or centralized steatite artifact production was
- how this varies by artifact type (e.g., bead vs. cooking vessel vs. shaft straightener)
- how all of these issues changed over time

Establishing the geographic origin of prehistoric steatite artifacts within North America is of integral interest to archaeologist studying issues of trade and exchange. It has been noted in work done in eastern North America that there are differences in the composition of steatite from different quarries (Holmes 1987; Bushnell 1940, cited in Truncer et al. 1998). Truncer et al. have examined the use of instrumental neutron activation analysis (INAA) as apposed using rare earth elements (REEs) to characterize steatite sources found in the Middle Atlantic region of eastern North America (1998). By comparing INAA of the quarry sources and steatite artifacts found within the region, it was concluded that INAA has the potential to assign provenance to the artifacts, at least at a regional level (Truncer et al. 1998). This technique of using INAA to test steatite quarries and artifacts within the Sierra Nevada Mountains has the potential to yield valuable information about the trade and exchange throughout the Sierras.

Addressing these issues will require collecting three kinds of data. The first will come from actual quarries. Some work at quarry locations, particularly larger ones, has already been undertaken (e.g., Moratto 1988). Our survey component of the field research will attempt to locate additional quarries, but focusing on smaller outcrops of steatite. This will allow us to evaluate how extensive and important steatite was as a raw material for producing artifacts. Thus, if smaller outcrops were all used in prehistory, in addition to larger ones, this would imply high value and great importance of steatite. On the other hand, if smaller outcroppings were generally ignored, and only larger quarries (with perhaps higher-quality material) were targeted, this would imply less importance on a regional scale. Dating quarrying activity will be somewhat difficult, but carbon associated with quarrying debris may help establish some age controls on steatite use at quarry sites over time.

Second, we need to gauge steatite use away from outcroppings within domestic sites. This will require excavation at a number of habitation sites over time to evaluate the degree to which steatite artifacts were used locally in the Merced-Mariposa region. Our

excavation plans at three small habitation sites, in addition to survey and test excavation at a small number of additional sites, will provide a database to begin evaluating diachronic steatite consumption.

Third, to examine diachronic patterns in steatite exchange, we will need to 1) gather evidence on steatite source geochemistry within the Sierra Nevada, which will require visiting various outcroppings and taking small samples for analysis, and 2) sampling steatite artifacts from sites in other regions (e.g., Central Valley, Owens Valley) and determining their source provenance. This component of the research is beyond the scope of the current proposed field research on BLM land, and will require accessing museum specimens. In any case, the three components above will comprise the foundations of the dissertation research of Rebecca Gilbert.

Proposed Research

Fieldwork is conceptualized as comprising two components, one involving small-scale excavation at a sample of known and recorded sites, the second involving survey for new sites (with limited test-excavation). The first component focuses on three archaeological sites previously recorded by Dean Decker and James Barnes of the Bureau of Land Management, Folsom office (see Figure 1), and one unrecorded site on Saxon Creek. These sites are described below; all are threatened by mining and road development and/or reservoir effects. Proposed complimentary survey and test excavation is designed to help locate Early and Middle Archaic sites, of which we know little (especially with regards to steatite use), and potential steatite sources and quarrying activities.

All excavations and survey will be under the direction of Clint Cole, Rebecca Gilbert and Carly Whelan, graduate students in archaeology at UC Davis. Gilbert and Whelan are working under the guidance of Dr. Jelmer W. Eerkens (faculty in the Department of Anthropology, UC Davis), while Cole is completing his dissertation under the direction of Dr. Robert Bettinger (also faculty in the Department of Anthropology at UC Davis). Eerkens will be present during the first week, and he and Bettinger will make at least one other field visit in the 6-week period. Based on his extensive fieldwork experience, Clint Cole (expected to have finished his PhD by the time of fieldwork from the UCD Department of Anthropology), will serve as field director, while Gilbert and Whelan will serve as crew chiefs.

The field crew will consist of the staff (Cole, Gilbert, Whelan, and possible a teaching assistant) and undergraduates enrolled in the UC Davis archaeology field school (ANT 181). The class is limited to 24 students, though typically between 16 and 20 enroll. The field school generally camps in the vicinity of the project (typically within 30 minutes drive of survey/excavation locales). Camping on-site or adjacent to sites is not necessary, but if facilities are available, this would be preferable. If facilities are not available and the field school needs to camp on-site on BLM-administered land, we will give BLM 30 days notice and we will provide portable facilities. We will follow a "leave no trace" ethic. Students and equipment are transported by two to three 9-person passenger vans and one to two smaller trucks. We are aware that vehicle access to the sites selected for excavation is controlled by private landowners and we will work with the BLM to get permission from these landowners before crossing their property.

Excavation

The four sites selected for hand excavation are believed to represent a range of habitation sites that will help us address steatite consumption, and basic subsistence settlement pattern information, in the region. Other than basic recordation and preliminary field visits, none of these sites has been explored or investigated further by archaeologists.

For this reason, we selected a range of sites, rather than only one or two to focus our investigations. We simply do not know about the age, the full range of artifacts present, or the state of preservation in these sites. Some of the sites described below may not contain the evidence needed to address the research questions we have, and in those cases we will spend less time excavating and move on to other sites. However, given our experience with sites in the region, we believe at least one or two will prove to have such evidence. Of course, all the sites we investigate will receive proper laboratory and curatorial treatment. Moreover, we believe that all sites investigated, large or small, well-preserved or not, will contribute at some level to our basic model building regarding settlement-subsistence patterns in the region. Thus, while we may decide to excavate only the lower end of the volume range (given below) for any particular site, due to low artifact counts or other factors, we will include all sites in our final analysis.

Based on field visits, observation of surface artifacts, descriptions in site records, and conversations with archaeologists and other knowledgeable individuals, these sites appear to represent primarily Late Holocene occupation (Late Archaic through Recent Prehistoric II according to the chronology outlined in Table 1). Based on materials present, we believe the sites represent a range of functional behaviors, from smaller-scale and temporary campsites to more permanent small villages.

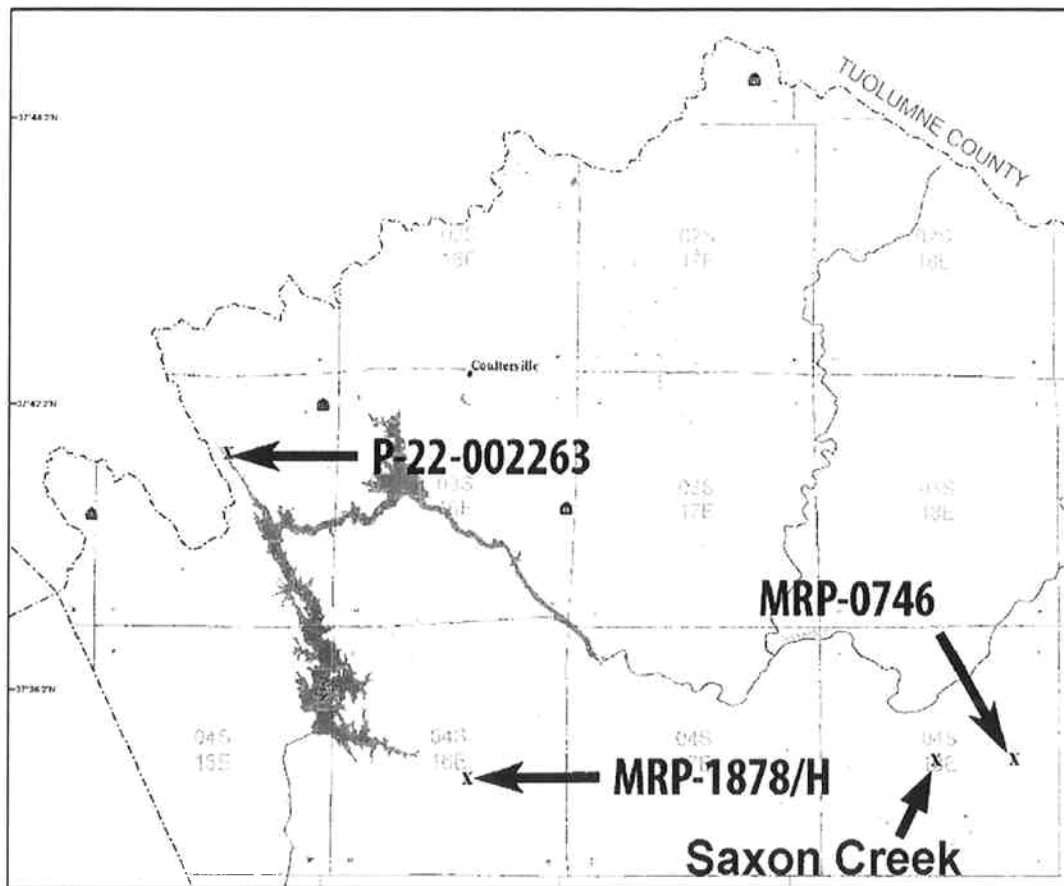
CA-MRP-746 is a prehistoric site identified by Dean Decker in 1986 during a surface survey conducted in conjunction with the construction of a new road on BLM land (for location, see Figure 1). It is located on a hillside overlooking Trabuco Creek about 30 meters from the new road intersection with Trabuco Creek Rd. in the Feliciano Mountain USGS 7.5' quadrangle of Mariposa County. The size of the site was undeterminable at time of recordation and consists of a sparse surface scatter of lithics, including a cobble mano, obsidian reduction flakes, and a non-diagnostic obsidian point fragment. The visible material is in the disturbed context of the new road, but Decker reported that the ground surface outside the roadway appeared undisturbed.

P-22-002263 (trinomial not available; see Figure 1 for location) is a prehistoric site recorded by Dean Decker on BLM land in 2001. It is located at the confluence of two forks of Piney Creek in the Penon Blanco Peak USGS 7.5' quadrangle of Mariposa County. The site is approximately 35 meters by 35 meters and consists of a lithic scatter and midden area of darkened soil. Two boulders with two bedrock mortars each are located across the creek from the site. The site suffers from numerous historic disturbances, including a 2 by 3 meter pit, a ditch on the eastern side, a road on the northern side, and heavy cattle use. Water-level fluctuations of the reservoir and unauthorized motorized vehicle use continue to damage the site through erosion. As well, during a preliminary field visit, it was clear that this is a popular destination for firearm enthusiasts, who park near the site and travel on foot through the canyon. Collecting activities by such foot traffic is inevitable and further contributes to site disturbance.

CA-MRP-1878/H contains both prehistoric and historic components and was identified by James Barnes on BLM land in 2006. It is located near the convergence of two small drainages in the Hornitos USGS 7.5' quadrangle of Mariposa County. The prehistoric component of the site consists of an area of darkened soil with fire affected rock and sparse basalt flakes and burned faunal remains. It has been disturbed by an historic occupation and is further threatened by its proximity to Mt. Gaines mine. Modern mining disturbances are visible within approximately 200 meters of the site. A small fence has been placed around the main part of the site, but is already falling down due to soil creep (i.e., solifluction). The current operator at the Mount Gaines Mine has told BLM that he has plans to expand his sand and gravel operation. According to the operator the operation would be expanded in a way that threatens the site.

An unrecorded site on Saxon Creek has also been noted by BLM archaeologist James Barnes, who visited the location in November of 2008 (Barnes, personal communication, 2009). This site is located on a small terrace overlooking Saxon Creek. Below, we will refer to this site simply as "Saxon Creek." Basalt and obsidian flakes, fire affected rock, a small unfinished obsidian projectile point, and other artifacts were noted by Barnes eroding out of the terrace where an unpaved road cuts through the site. Continued use of the road as well as other disturbances are damaging the site, and investigations are needed to evaluate the nature and significance of this location.

Figure 1: Location within Mariposa County of four sites targeted for excavation.



We anticipate beginning at either MRP-1878/H or the unrecorded site on Saxon Creek. At minimum four, but up to 20 square meters, will be excavated at each of these sites, depending on the depth (greater depth would preclude more extensive spatial excavation), sediment conditions (difficult digging and/or screening would minimize excavation volume), degree of disturbance at the site (greater disturbance would minimize investment at the site), and the potential discovery of features (additional units may be placed near features to better delineate shape, size, and nature). Based on a preliminary field visit, we estimate that the depth of the deposit will not exceed 1 meter.

P-22-002263 will be the third site investigated, pending time constraints. A minimum of four, but up to 20 square meters, would be examined through subsurface excavation. Depth of this deposit at P-22-002263 is not known, but we believe that less than 1 meter is present. Again, the surface area and volume of material excavated will depend greatly on sediment conditions, and site context.

Finally, time permitting, we propose limited excavations at CA-MRP-746. Up to 15 square meters would be excavated at this site. The amount excavated, if any, will be dictated by the amount of time that was invested at previous sites, as well conditions mentioned above.

Excavation at CA-MRP-1878/H, Saxon Creek, P-22-002263, and CA-MRP-746 will take place in 1x0.5, 1x1, 1x2, and 2x2 meter units using trowels shovels and 1/8 and 1/4 inch wire mesh screens. We will begin with trowels and 1/8 screening, and a slow

pace, to train undergraduate students in basic field excavation methodology. We will then gradually shift to excavation with shovels and 1/8 mesh. In some circumstances, when adequate 1/8 mesh samples have been excavated from a site, and findings warrant removal of greater volume, we may switch to the use of 1/4 wire mesh screens. When we encounter features we will switch to finer excavation techniques, such as trowels and brushes. Sediment samples will also be taken from such contexts and sifted through finer wire mesh screen (1/16 to 1/32 inch screens). As well, we will remove samples for flotation analysis to recover small charred plant materials. Column samples from selected site contexts may also be removed and sifted through finer wire mesh in the laboratory to recover fish remains and micro-artifacts.

We will generate more detailed field maps for each site that will also show the location of excavation units. Initial excavation units (n=3-6) will be placed to sample a range of locations across any given site. This will include spatial breadth as well as an effort to sample different topographic or cultural features (e.g., near BRMs). Additional units will be placed near units that produce higher volumes of materials that can be used to address the research issues, or to sample between widely spaced excavation units (if the initial units suggest in-tact deposits). All excavations will proceed in depth in 10 centimeter arbitrary levels unless well-demarcated cultural features and/or natural stratigraphic breaks are encountered. A combination of trowel and shovel excavation will comprise the majority of digging, with smaller-scale tools used in certain situations (e.g., features). We do not anticipate using mechanical digging (e.g., back-hoe), but should such need arise we would consult with the BLM archaeologist.

If human remains are discovered during field work, all work in the area/unit of the discovery will stop and the human remains will be left in place and treated with respect. The BLM Folsom Field Office archaeologist will be contacted immediately. Agreed-upon protocols (agreed upon with BLM and Native American tribes prior to excavation) would be followed.

Throughout, both the staff (Cole, Gilbert, Whelan) and students will maintain field notes. These notes include information collected from both specific excavation levels and units (i.e., as level records), as well as more general observations about site integrity, site function, and site interpretation (field journals). Field journals from the staff will be copied and made available to the BLM following fieldwork. As well, all original notes will be permanently curated with the site assemblages at the UC Davis Museum of Anthropology.

In sum, excavating CA-MRP-1878/H, Saxon Creek, P-22-002263, and CA-MRP-746 will allow us to determine their legal significance before they are further damaged or destroyed through natural erosion and by various proposed projects and unauthorized land uses. Together, investigations at all four sites will provide a better understanding of the prehistory of the west-central Sierra, particularly the region surrounding the Merced River.

In accordance with the terms of a BLM-issued ARPA permit and BLM policy, we will submit a preliminary report to the BLM Folsom Field Office within 10 days of completion of excavations. The report will be in letter form and will set out what was done, how it was done, by whom, and specifically what was found. After we submit this report, we will periodically submit progress reports via email to the BLM archaeologist. Not later than 180 days, we will submit copies of all field notes, preliminary artifact

catalogs, and specialist reports (if any have been completed) to BLM. Not later than 360 days after completion of the excavations or before we apply for a new ARPA permit to conduct any additional fieldwork on BLM Folsom Field Office-administered land, we will submit to BLM Folsom Field Office a final report fully documenting the excavations and evaluating the legal significance of the studied sites. The report will follow all applicable content/format and other requirements listed under California Conditions attached to our ARPA permit. The report will include all the elements of a professional archaeological excavation report including a table of contents, summary, context/setting, field methods, artifact/feature descriptions, interpretations/results, conclusions, photos, sketches, etc. The reports will have site maps clearly showing the location of units and other artifact collection points. Also, using the results of field work, the report will include a formal evaluation of the sites using the criteria found at 36 CFR 60.4 and will include recommendations whether the sites are eligible for inclusion in the National Register of Historic Places. The report will also provide basic management recommendations for BLM. The report will include, or be accompanied by, finalized artifact catalogs and any standalone specialist studies (i.e., radiocarbon dating, obsidian hydration, obsidian sourcing, etc.). BLM will have four weeks to review and comment on the report. It is expected that UC Davis will generate doctoral dissertations, professional conference papers, publications, and other works based on the fieldwork. We will provide these to BLM as they are completed.

Survey

To compliment the more intensive excavations at the three sites described above, we also propose to undertake pedestrian survey on BLM land in Mariposa County. The goals of this work are two-fold. First, we aim to locate additional sites to assist in our reconstructions of diachronic settlement-subsistence patterns. This database of surveyed sites, although at coarser resolution, will compliment the excavation data to be generated above. Second, we aim to locate smaller steatite outcroppings that may (or may not) have been used by Native Californians. This will help in the interpretation of regional steatite production and use. Samples or raw steatite from used and unused outcroppings will be collected to assist in future geochemical (INAA) provenance studies. A small sample (2-5) sites will be test excavated (e.g., no more than three 1x1m or six 1x0.5m units) to determine the presence of subsurface remains and the overall state of preservation at such sites. As well, with the survey we hope to be able to identify promising sites that may be excavated in future field seasons. If promising sites are found and future field work anticipated, the proposed work would be authorized under a separate ARPA permit issued by BLM. The permit application process would involve the required consultations and environmental review.

Survey will proceed using 25 meter spacing intervals between survey participants. Surveyors will walk E-W transects in randomly selected survey blocks, looking for artifacts and features. This surveying strategy will allow us to generate both a random assemblage of sites across the landscape. As well, we will target a number of incised river channels to locate buried sites and features. In this aspect of the survey, two individuals will walk in the stream channel, each looking along a cut bank, and two surveyors will walk on (i.e., above) the cut bank, looking for artifacts on the surface.

All prehistoric sites and isolates encountered will be recorded, to BLM standards, using the Department of Parks and Recreation form system. Because this research is not concerned with historical activities, we will not systematically record historical sites (though we may record more notable finds). We will establish site locations using Global Positioning System (GPS) and submit site records to the Information Center to obtain permanent trinomials. As part of this survey we propose to collect temporally diagnostic surface materials, as well as a small random sample of surface materials, for analysis in the lab (i.e., to determine suitability of sites for future investigations and determine broader prehistoric landscape use over time).

At this time we have not yet selected specific tracts of land to survey within the lands administered by BLM. We would like to work with the BLM archaeologist to determine areas that are in need of survey. As well, we hope to work with BLM archaeologists and other knowledgeable individuals to locate tracts of land that have a higher incidence of incised stream channels.

In accordance with the terms of a BLM-issued ARPA permit and BLM policy, we will submit a preliminary report to the BLM Folsom Field Office within 10 days of completion of the survey/test excavations. The report will be in letter form and will set out what was done, how it was done, by whom, specifically where, and with what results, including precise and accurate locational data depicted on the USGS 7.5' quadrangle maps. After we submit this report, we will periodically submit progress reports via email to the BLM archaeologist. Not later than 180 days after completion of the survey/test excavations, we will submit to BLM Folsom Field Office a final report documenting the results of the survey. The report will include completed site records for each newly recorded site and our professional management recommendations. The report will follow all content/format and other requirements listed under California Conditions attached to our ARPA permit. BLM will have two weeks to review and comment on the report. Not later than 360 days after the completion of the survey/test excavations or before we apply for a new ARPA permit to conduct any additional fieldwork on BLM Folsom Field Office-administered land, we will submit a final report fully documenting the results of any test excavations carried out as part of the survey. Again the report will follow the format and other requirements listed under California Conditions attached to our ARPA permit. The report will also include all the elements of a professional archaeological excavation report including a table of contents, summary, context/setting, field methods, artifact/feature descriptions, interpretations/results, conclusions, photos, sketches. The reports will contain site maps clearly showing the location of excavated units and other artifact collections. The report will include, or be accompanied by, finalized artifact catalogs and any standalone specialist studies (i.e., radiocarbon dating, obsidian hydration, obsidian sourcing, etc.). The report will include basic management recommendations. BLM will have four weeks to review and comment on the report.

Laboratory Methods

Generally, all artifacts and ecofacts will be collected in the field and placed into temporary bags, before being transported to the laboratories at UC Davis. However, some initial processing and cataloging may occur at the campsite in the field. At the UC Davis lab, artifacts are transferred to permanent curation-quality plastic bags. Some types of

materials, such as fire-cracked rock, may be only sampled in the field to reduce bulk weight and volume of materials brought back to the laboratory. As well, particularly large and heavy millings may be photographed and measured in the field, and left in place.

All laboratory analysis will be undertaken at UC Davis in the Department of Anthropology, under the direction of Rebecca Gilbert, Carly Whelan, and Jelmer Eerkens. Undergraduate volunteers will work with Eerkens, Gilbert, and Whelan to perform laboratory analyses. All artifacts will be catalogued in a central computerized database. Formal artifacts will be individually bagged and labeled with unique numbers. Debitage, shell, bone, and other materials that occur in large numbers will be bagged in aggregate units with a single catalog number assigned to the entire lot.

Standard lithic and groundstone analyses will be undertaken to provide simple descriptive data on size, weight, and other visible attributes for formal artifacts. We also plan to undertake a number of more specialized laboratory analyses to help with the research program. Planned analyses include a number of different dating techniques to establish a fine control over technological and behavioral changes through time, including (where appropriate) radiocarbon analysis of charcoal (^{14}C), archaeomagnetic dating of features, and obsidian hydration. In addition we will also undertake steatite and obsidian sourcing using INAA (or LA-ICP-MS) to better understand patterns in prehistoric exchange and trade. Other specialized analyses, such as basalt sourcing and residue analysis may be applied if funds and adequate samples are available.

Paleobotanical and flotation analyses will be performed to determine the types of plant remains people processed and ate. Faunal remains will be classified to species level to determine the range of animal species hunted and collected. Stable isotope analyses may be undertaken on soil samples from habitation surfaces and/or animal remains, to better understand paleoenvironment at the time sites were occupied.

Please note that some of these analyses are partially destructive and will require removing small samples from artifacts prior to analysis. We will attempt to minimize the amount of such destruction and will photograph artifacts before they are submitted for destructive analysis.

Curation

Finally, all materials will be curated at the Anthropology Museum, Department of Anthropology, at UC Davis. The museum has strict curatorial guidelines and houses collections from numerous federal and state agencies including the BLM. We will prepare the materials according to these standards and will pay for curation costs. A curation agreement has been formally reached with the museum and a letter outlining this agreement is available upon request.

Time Schedule

In undertaking the research we propose the following time schedule for the following year. A longer-term schedule would, of course, include additional seasons of fieldwork and the eventual completion of the dissertation.

Year: Dates	Activity	Deliver to BLM
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2009: June 22 - July 31	Field Work	
2009: Aug. 1 - Sept 15	Tie up loose fieldwork ends; Organize materials	
2009: September 25		Submit preliminary excavation and survey reports.
2009: Sept. 16 - Dec. 15	Cataloging of materials; Submit 14C & obsidian samples; prepare survey and excavation reports	
2010: Jan. 5 - Mar. 15	Analysis of materials: faunal, lithic, steatite, flotation; prepare survey and excavation reports	
2010: Mar. 15		Submit excavation field notes, preliminary artifact catalogs, etc. Submit survey report with completed site records.
2010: Mar. 30 - June 15	Continued analysis. Plan 2010 fieldwork.	
2010: July 31 or before applying for new ARPA permit for summer 2010 fieldwork		Submit excavation report with artifact catalogs, specialist studies, etc. Submit addendum survey report documenting test excavations at sites found during survey.

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